



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#12
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In re the Application of

Christopher D. BLAIR et al.

Group Art Unit: 1775

Application No.: 09/584,373

Examiner: G. Blackwell-Rudasill

Filed: May 31, 2000

Docket No.: 105732

For: ROLL HAVING GLASS COATING

REQUEST FOR RECONSIDERATION

Director of the U.S. Patent and Trademark Office
Washington, D.C. 20231

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Sir:

In reply to the February 13, 2003 Office Action, reconsideration of the rejections is respectfully requested in light of the following remarks.

I. Formal Matters

Claims 1-44 are pending. Claims 1, 2, 5, 6, 10-15, 18, 19 and 23-26 are rejected. Claims 3, 4, 7-9, 16, 17 and 20-22 are objected to. Claims 27-41 and 44 are withdrawn from consideration. Applicants respectfully request rejoinder of the process claims upon determination of allowance of the article claims.

Applicants gratefully acknowledge that claims 3, 4, 6-10, 16, 17, 19-23, 25 and 42-43 contain allowable subject matter. However, Applicants decline to rewrite the allowable claims into independent form at this time, and instead respectfully assert that all apparatus claims are in condition for allowance.

II. Claims 1-44 Define Patentable Subject Matter

The Office Action rejects claims 1, 13-14 and 26 under 35 U.S.C. §102(b) as being anticipated by United States Patent 4,057,666 to Drummond, Jr. (Drummond). Applicants respectfully traverse the rejection.

Drummond fails to teach or suggest disclose a roll comprising a core and a coating comprising a glass material provided over the core, wherein the glass material can be electrically charged and discharged, as recited in claim 1.

Instead, Drummond discloses a magnetic brush cylinder 46 formed from a base material 80, such as plastic, glass, rubber, ceramic, or the like, impregnated with chip-like pieces 81 of a relatively hard material such as tungsten carbide, sand, glass, silicone carbide, non-ferrous metals, or the like. See col. 4, lines 48-53 and Fig. 5 of Drummond. Also, Drummond discloses that the base material 80 should be electrically conductive, or contain a conductive filler, or plated with a suitable metal such as stainless steel. See col. 5, lines 5-15 of Drummond.

The magnetic brush cylinder 46 of Drummond is used in a developing assembly 30 that includes a series of magnetic brush rollers 36 rotatably supported in frame end plates 32, 34. The magnetic brush rollers 36 are hollow cylinders 46 having a roughened exterior surface 46'. Each hollow cylinder 46 is closed by caps 50 and 54 and supported by bearing means 60. An internal bar magnet 61 on a shaft 58 extends through the cap 54, permitting the hollow cylinder 46 to rotate relative to the shaft 58. See col. 3, line 57 – col. 4, line 7 and Fig. 4 of Drummond.

By teaching a hollow cylinder composed of electrically conducting base material and exhibiting a roughened exterior surface, Drummond teaches away from Applicants' claims. Drummond fails to teach or suggest a core with a coating, but instead discloses a sleeve surrounding but not engaging a bar magnet. Also, Drummond fails to teach or suggest a

coating of glass material that can be electrically charged and discharged, but rather discloses an uncoated base material that is itself electrically conductive. A material having electrical capacitance is chargeable and dischargeable. A material that is electrically conductive enables flow of electrons. These characteristics are dissimilar, and, in many applications, may be considered mutually exclusive.

Finally, Drummond discloses that the magnetic brush cylinder exhibits a roughened surface with chip-like pieces embedded in the base material. A cylinder having chip-like pieces 81 of relatively hard material embedded in a non-metallic base material 80 does not in any way teach or suggest a coating of glass material provided over a core.

The magnetic brush cylinder 46 does not have a coating, as the chips 81 of relatively hard material do not form a coating, nor would one of ordinary skill in the art understand the chips 81 of relatively hard material to be, or even act as, a coating. The magnetic brush cylinder 46 is not a coating provided over the internal bar magnet 61, as Drummond clearly teaches that these two elements are physically distinct and independent of each other, especially in view of Drummond's teaching that the magnetic brush cylinder 46 can rotate relative to the shaft 58 (and thus to the bar magnet 61). Thus, the magnetic brush cylinder is not a coating provided over the bar magnet 61, nor would one of ordinary skill in the art understand the magnetic bush cylinder 46 to be a coating provided over the bar magnet 61.

Thus, for at least the reasons outlined above, Drummond does not teach or disclose all the features of claim 1. Accordingly, Drummond fails to anticipate the subject matter of claims 1-44 under 35 U.S.C. §102(b). Applicants respectfully request withdrawal of the §102 rejection of claims 1, 13-14 and 26 as anticipated by Drummond.

The Office Action also rejects claims 2, 5, 11-12, 15, 18 and 24 under 35 U.S.C. §103(a) as being unpatentable over Drummond and further in view of United States Patent 5,697,029 to Saitoh et al. (Saitoh). Applicants respectfully traverse the rejection.

Saitoh does not compensate for the deficiencies of Drummond, nor does Saitoh teach or suggest the features recited in the dependent claims.

Instead, Saitoh teaches a developing roller having a magnet roller and a cylindrical sleeve, with a coating formed on the outer surface of the sleeve. The coating is composed primarily of a metal, alloy, metal nitride, metal oxide, metal carbide or metal sulfide. The coating may also include an organic component. See col. 3, lines 8-28 of Saitoh. A glass material, on the other hand, typically comprises silica and/or soda, which generally represent inorganic non-metal compounds.

While Saitoh describes a quartz glass coating in Comparative Example 2, this material indicated unsatisfactory results. In particular, Saitoh cites that "no clear print image" was obtained from the developing roller with a quartz glass sleeve. See col. 5, lines 2-3 and 30-36 of Saitoh. By demonstrating the asserted non-operability for the quartz glass coating, Saitoh teaches away from the present invention.

In addition, while the Office Action asserts that sputtering a target of quartz, as disclosed in Saitoh, will produce a layer of quartz glass deposited on a surface to be coated, one of ordinary skill in the art would expect such a coating to have a crystalline form of silicon dioxide, rather than amorphous glass. As such, the silicon dioxide coating could be insulating, and thus would not be able to be discharged. Further, Saitoh has no mention or conception of the quartz glass being electrically chargeable or dischargeable, as recited in claim 1.

Neither Drummond nor Saitoh, either separately or in combination, teach, disclose or suggest all the features recited in claims 1-44. Thus, the combination of Drummond and Saitoh fails to render obvious the subject matter of claims 1-44.

Withdrawal of the rejection of claims 2, 5, 11-12, 15, 18 and 24 as unpatentable over the combination of Saitoh and Badesha is respectfully requested.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-44 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Date: March 11, 2003

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